

## CLAIMS

**WHAT IS CLAIMED IS:**

1. A control apparatus comprising:

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a controller which can be pressed and operated;

a detecting device for outputting an analog signal corresponding to the pressing operation of said controller; and

(12)  
a level segmenting unit for segmenting the analog signal which is outputted by said detecting device in accordance with the pressing operation of said controller into a plurality of levels;

an A/D converting unit for converting said analog signal into a digital signal in accordance with the output level which is segmented by said level segmenting unit; and

a segmenting-range setting unit for setting a range of output levels of the analog signal which is segmented by said level segmenting unit,

wherein the plurality of levels into which the analog signal outputted by said detecting device is segmented by said level segmenting unit are within the range which is set by said segmenting-range setting unit.

2. An apparatus according to Claim 1, further comprising a switch for switching the outputted signal to either one of a digital signal having a plurality of bits and a digital signal having a single bit, said switch being connected to said A/D converting unit.

3. An apparatus according to Claim 1, wherein

said segmenting-range setting unit comprises a storing unit, and

the plurality of output levels, which are within the range of output levels of the analog signal, into which the analog signal outputted by said detecting device are segmented by said level segmenting unit are stored in said storing unit.

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4. An apparatus according to Claim 3, wherein, in place of said storing unit in said control apparatus, a storing unit in an entertainment device serving as a main body to which said control apparatus is connected is used.

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5. An apparatus according to Claim 1, wherein

said segmenting-range setting unit is a volume device that is inserted in a power line to which said detecting device is connected, and

the plurality of levels within the range of the output levels, into which the analog  
10 signal outputted by said detecting device is segmented by said level segmenting unit is  
detected by said volume device.

6. An apparatus according to Claim 1, wherein said segmenting-range setting unit comprises:

15 a volume device that is inserted in a power line to which said detecting device is connected;

a storing unit for storing a limit value of a range of the output levels of the analog signal which is segmented by said level segmenting unit; and

20 a comparator for comparing the range of the output levels, which is detected by said volume device with the limit value which is stored in said storing unit,

wherein said comparator outputs the range of output levels which is detected by said volume device to said level segmenting unit when said range of output levels is within the limit value which is stored in said storing unit, and outputs the limit value which is stored in said storing unit to said level segmenting unit when the output level which is detected by said volume device is over said limit value.

7. An apparatus according to Claim 1, further comprising a projection which is formed

at the bottom of said controller, and an elastic body having a concave portion which engages with and supports said projection, wherein said detecting device is pressed due to deformation of said elastic body.

- 5 8. An apparatus according to Claim 1, further comprising a flat surface which is formed at the bottom of said controller, and an elastic body having a flat surface which engages with and supports said flat surface, wherein said detecting device is pressed due to deformation of said elastic body.
- 10 9. An apparatus according to Claim 7 or 8, wherein said detecting device comprises an internal board.
- 15 10. An apparatus according to Claim 1, further comprising:  
a switch;  
a digital switch serving as an ON/OFF switch provided in said controller; and  
a digital signal generating unit for outputting a digital signal having a single bit,  
said digital signal generating unit being connected to said digital switch,  
wherein said switch switches an output of the digital signal generating unit and  
the output of said A/D converting unit.
- 20 11. An apparatus according to Claim 10, further comprising:  
an elastic body which engages with and supports the bottom of said controller;  
a first sheet member and a second sheet member; and  
first and second fixed terminals provided in said digital switch which are pressed  
25 due to deformation of said elastic body and which are provided on one side of said first sheet member,  
wherein said detecting device is provided on one side of said second sheet

member at portions corresponding to said first and second fixed terminals.

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12. An apparatus according to Claim 11 wherein said second sheet member is an internal board.

Sub A3  
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13. An apparatus according to Claim 10, further comprising:  
an elastic body which engages with and supports the bottom of said controller;  
and

10 first and second fixed terminals provided in said digital switch which are pressed due to deformation of said elastic body and which are provided on one side of said sheet member,

wherein said detecting device is provided on the other side of said sheet member at portions corresponding to said first and second fixed terminals.

15 14. A signal output adjusting method of a control apparatus according to Claim 3, wherein said controller is pressed and controlled by a pressure which is preset and the output level of the analog signal which is outputted by said detecting device during the pressing operation of said controller is stored in said storing unit.

20 15. A signal output adjusting method of a control apparatus according to Claim 5, wherein, if the output level which is detected by the volume device that is inserted in the power line to which said detecting device is connected is changed and said output level is monitored, the output level of the analog signal outputted by said detecting device is segmented into the plurality of levels within the range of the output levels which is  
25 detected by the volume device after the change.

16. A signal output adjusting method of a control apparatus comprising a controller

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which can be pressed and operated, a detecting device for outputting an analog signal corresponding to the pressing operation of said controller, a level segmenting unit for segmenting the analog signal which is outputted by said detecting device in accordance with the pressing operation of said controller into a plurality of levels, and an A/D  
5 converting unit for converting said analog signal into a digital signal in accordance with the output level which is segmented by said level segmenting unit, said control apparatus being connected to an entertainment device having a function of a program, said method comprising the steps of:

10 outputting, by said entertainment device, a control guide on the basis of a predetermined adjusting program;

storing the output level of the analog signal which is outputted by said detecting device in a storing unit which is built in or connected to said entertainment device; and

15 segmenting, by said level segmenting unit, the analog signal which is outputted by said detecting device into a plurality of levels on the basis of said output level which is stored in said storing unit.

17. A method according to Claim 16, further comprising the step of storing the output level of the analog signal which is outputted by said detecting device in a memory card as said storing unit, which is detachably connected to the entertainment device, by  
20 pressing and operating said controller in accordance with said control guide.

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